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# REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL

Address to:  
Commissioner for Patents  
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Washington, DC 20231

Application Number	09/802,791
Filing Date	3-8-01
First Named Inventor	Borrelli, Nicholas F
Art Unit	2882
Examiner Name	Kao, Chih Cheng G
Attorney Docket Number	SP00-139

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application. Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

## 1. Submission required under 37 CFR 1.114

- a. ☐ Previously submitted
- i. ☐ Consider the amendment(s)/reply under 37 CFR 1.116 previously filed on \_\_\_\_\_  
(Any unentered amendment(s) referred to above will be entered).
- ii. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_
- iii. ☐ Other \_\_\_\_\_
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- ii. ☐ Affidavit(s)/Declaration(s)
- iii. ☐ Information Disclosure Statement (IDS)
- iv. ☐ Other \_\_\_\_\_

## 2. Miscellaneous

- a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of \_\_\_\_\_ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)
- b. ☐ Other \_\_\_\_\_

## 3. Fees

The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

- a. ☒ The Director is hereby authorized to charge the following fees, or credit any overpayments, to Deposit Account No. 03-3325
- i. ☒ RCE fee required under 37 CFR 1.17(e)
- ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)
- iii. ☐ Other \_\_\_\_\_
- b. ☐ Check in the amount of \$ \_\_\_\_\_ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	Svetlana Z. Short	Registration No. (Attorney/Agent)	34,432
Signature	<i>Svetlana Short</i>	Date	6/27/03

## CERTIFICATE OF MAILING OR TRANSMISSION

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Name (Print/Type)	Svetlana Z. Short	Date	6/27/03
Signature	<i>Svetlana Short</i>		

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C.P.

SP00-139

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor: Borrelli, et al.

Serial No: 09/802791

Filing Date: 3/8/01

Title: GLASS-CERAMIC FIBER LASERS  
AND AMPLIFIERS

Group Art Unit: 2882

Examiner: Kao, Chih Cheng G

**REPLY**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

**RESPONSE TO THE EXAMINER'S ADVISORY ACTION**

In reply to the Advisory Action dated May 20, 2003, designated as Paper No. 10  
please amend the above-captioned application as follows:

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of  
this paper.

**Remarks** begin on page 5 of this paper.

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1. **(Currently Amended)** A glass-ceramic rare earth doped fiber, said glass-ceramic fiber comprising a plurality of crystallites, wherein at least 90% of the rare earth dopant is situated within said crystallites of said glass-ceramic fiber.

2. **(Original)** The glass-ceramic rare earth doped fiber according to claim 1, wherein said crystallites are 1000-nm or smaller.

3. **(Original)** The glass-ceramic rare earth doped fiber according to claim 1, wherein said crystallites are 100nm or smaller.

4. **(Original)** The glass-ceramic rare earth doped fiber according to claim 1, wherein said crystallites are 10nm or smaller.

5. **(Currently amended)** The glass-ceramic rare earth doped fiber according to claim 1, wherein stimulated emission and absorption line shapes of said glass-ceramic rare earth doped fiber are narrower than that stimulated emission and absorption profile of its a precursor rare earth doped glass.

6. **(Previously Amended)** The glass-ceramic according to claim 1 wherein said rare earth dopant is Pr, Er, Tm, or Dy, where dopant level is greater than 100ppm.

7. **(Original)** An optical amplifier comprising:

(i) an input port ;

(ii) a length of glass-ceramic rare earth doped fiber, said glass-ceramic fiber being operatively coupled to said input port; said glass-ceramic fiber including a plurality of crystallites, wherein at least 90% of said rare earth dopant is situated within said crystallites;

(iii) at least one of optical pump coupled to said glass-ceramic rare earth doped fiber;

(iv) an output port providing an amplified optical signal; and

(v) at least one optical component situated between said input port and said output port.

8. **(Original)** The optical amplifier according to claim 1, wherein said rare earth dopant is Pr, Nd, Tm, or Dy, Er.

9. **(Original)** The optical amplifier according to claim 7, wherein said crystallites are 1000-nm or smaller.

10. **(Original)** The optical amplifier according to claim 7, wherein said crystallites are 100nm or smaller.

11. **(Original)** The optical amplifier according to claim 7, wherein at least 95% of said rare earth dopant is situated within said crystallites.

12. **(Original)** The optical amplifier according to claim 7, wherein essentially all rare earth dopant is the microcrystalline phase of said glass ceramic fiber, and essentially none of said rare earth dopant is present in a surrounding glass.

13. **(Original)** An amplifier according to claim 7, wherein said optical component is a filter, an optical attenuator, a multiplexer, or an isolator.

14. **(Previously Amended)** The optical amplifier according to claim 7, wherein stimulated emission profile of said glass ceramic fiber is narrower than that stimulated emission profile of a similarly rare-earth doped glass.

15. **(Currently amended)** The optical amplifier according to claim 7, wherein stimulated emission profile of said glass ceramic fiber is narrower than that stimulated emission profile of a its precursor rare earth doped glass.

16. **(Currently Amended)** The optical amplifier according to claim 7, wherein individual absorption peaks of the rare earth ions of said glass-ceramic fiber said amplifier providing gain in at least 1320 to 1360 nm range is narrower than that of ~~the~~ its precursor rare earth doped glass.

C1  
cond

CI  
concl'd

17. **(Currently Amended)** The optical amplifier according to claim 7, wherein said rare earth dopant is Nd and said optical amplifier characterized by a shift in ESA spectrum in 1320 nm to 1360 nm wavelength range, with respect to emission of said rare earth doped glass-ceramic fiber.

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